A special meeting of the Board of Aldermen was held Monday, April 15, 2019, at 7:00 p.m. in the Aldermanic Chamber.

President Lori Wilshire presided; City Clerk Patricia Piecuch recorded.

Prayer was offered by City Clerk Patricia Piecuch; Alderman June M. Caron led in the Pledge to the Flag.

The roll call was taken with 12 members of the Board of Aldermen present; Alderman Gidge, Alderwoman Melizzi-Golja, and Alderman Laws were recorded absent.

His Honor, Mayor James W. Donchess and Corporation Counsel Steven A. Bolton were also in attendance.

President Wilshire turned the meeting over to Alderman Dowd, Chair of the Budget Review Committee, to conduct the public hearing.

**PUBLIC HEARING**

**R-19-127**

**AUTHORIZING THE MAYOR AND CITY TREASURER TO ISSUE BONDS NOT TO EXCEED THE AMOUNT OF TWO MILLION EIGHT HUNDRED THOUSAND DOLLARS ($2,800,000) FOR POLICE DEPARTMENT HEATING, VENTILATION, AND AIR CONDITIONING SYSTEM (HVAC), AND WINDOW IMPROVEMENTS**

Chairman Dowd

Welcome everyone. We are going to have a public hearing this evening on R-19-127 authorizing the Mayor and the City Treasurer to issue bonds not to exceed the amount of two million eight hundred thousand dollars for Police Department Heating Ventilation, and Air Conditioning System (HVAC) and window improvements. Whoever is going to present a little overview, please come up. And do we want the City Treasurer? Ok only if we have questions. While we are waiting why don’t you introduce yourself?

Deputy Chief of Police Michael Carignan gave a brief overview of R-19-127 before hearing public testimony.

**Michael Carignan, Deputy Chief of Police**

Thank you Chairman. I’d like to introduce myself, Deputy Chief Michael Carignan with the Nashua Police Department and I have with me Captain David Bailey who is in charge of the Services Bureau who has been working on this project as well.

Folks I’d like to thank you for allowing us to come up here and speak tonight. This is a project that is long overdue and it is critically important for the Nashua Police Department. Many of you were able to come to the Police Department and see first-hand some of the problems we have had with this windows project and HVAC system project. So I am going to give you a little overview basically what the problem is, the status of where we stand and what we are looking to do. If you have any questions, myself or Captain Bailey would be happy to answer them. We have detailed information from several different reporting sources.

We will start with the windows project which has already had a bid from DL King, accepted in the amount of $134,500.00. In 1979 the Nashua Police Department main building was built; we had windows installed in at that time which are now 40 years old. Some of those, when we had a 1999 an addition was put on the Police Department, several of the windows that were taken out of the old building and were put in the new building and repurposed. 47 of those windows are currently failing; I’m going to show you some pictures as we go through. In one of our locker rooms, you can see in the left hand side of the window, there’s a large gap in that window, a quarter of an inch wide and condensation, moisture and snow get in all the time and it is ruining all the sheetrock.
We have had to replace it several times. This is another area of the locker room again, you can see the window falling apart. All the sheetrock and stuff getting damaged up in there.

This is one of the original windows in the Detective Bureau, as you can see there is about a half to a three-quarter inch gap on the left-hand side. We’ve had to have duct tape, every winter we duct tape them to try to keep the winds from blowing in. We have had detectives along that whole side of the building, which is the north side of the building, have to put their coats on when they are in their cubicles typing because it’s been so cold with the cold air blowing in.

The Professional Standards which also faces north, these were some of the newer portions of the building that they repurposed old windows to. You can see the window on the left anytime it snows, snow comes in that window and as they come in in the morning, they’ve got a big pile of snow on their desk inside of the room. So these windows, we had a heat escape program or project done, you can see the windows on the left, the older windows the amount of energy that they are giving out, the heat and the energy that is coming out of those windows as opposed to the new ones on the right. Those look a lot more, well a lot less energy is escaping out and we will get back to what that means in a couple of minutes.

So we are looking for 47 windows that were originally built in 1979 to be replaced. And again, that bid has already been put out and accepted from DL King in the amount of $134,500.00. The windows that we are installing will be the same design and the same type that were added in to the 1999 addition. Now before I go on to the HVAC system, are there any questions on the windows?

Alderman Klee

Just a question, did you say that was $134,000.00 for the replacement of those windows?

Deputy Chief Carignan

Yes Ma’am that’s correct.

Alderman Klee

But on here it says $160,000.00, here it says window replacement $160,000.00 for 20 years on the ordinance.

Deputy Chief Carignan

Is that for the disposal?

Alderman Klee

Oh maybe that, the $160 is the $134 plus the disposals would that be correct?

Deputy Chief Carignan

It could be and I could confirm that for you.

Alderman Klee

Thank you, that’s fine.

Alderman Dowd

I will say that I went over and witnessed the building and I told them we were going to buy them some shovels with the amount of snow that gets in in the winter. It’s in really bad shape, these windows.
Alderwoman Kelly

Clearly we need to replace these; snowing inside does not make any sense. I was wondering I know you showed us the heat map, do you have any idea how much you will save in costs in terms of heating and efficiency once putting these new windows in?

Deputy Chief Carignan

So when we restarted the project a couple months ago, the Mayor had asked us to do this, however he had asked us after the project had already been sent out to bid. So instead of spending the money to do the energy study, we knew that they need to be done, so we opted to keep moving forward with the plan that we had. I am going to discuss a study in 2011 an energy efficiency study, I will show you some of the results, that’s at the end of the slide presentation. So I will get back to it and if you have some more questions we’ll get an answer.

Alderman Dowd

Additionally the savings would be hard to calculate since part of this project is replacing the entire HVAC system. So there is going to be a huge savings with a new, more efficient HVAC system as well. So the overall savings will be far exceeded just fixing the windows.

Deputy Chief Carignan

Thank you. The second and probably the more important part of this project is the replacement of the HVAC system. Again in 1999 several things were starting to fail as the building got 20 plus years old. We have what we call a mechanical room, I’ll get back to the pictures in a minute. This is part of our mechanical room. This is original to the building in 1977 and it has been operating in the same manner since then. It is old and outdated and continuous disrepair. As you can see the blue in the back, in the back upper right hand corner, that is part of the HVAC system that manages the air flow in our gun range, our firing range, which is downstairs right below this area. I’ll discuss that in a minute.

So in 1977 when this system began to fail a project was developed to replace it. That mechanical room was cut out of the project because it was too expensive. Instead they opted to install hot water pumps, heat water pumps.

David Bailey, Captain Nashua Police Department

Just a correction, I think you said 1977, it was 2005 you meant for when they cut that out of the replacement, the 2005 upgrades to the HVAC System, that was originally on there and then the City asked to cut that out, so that was cut out with the agreement with the Mayor at the time. If I’m not mistaken that was Streeter and that we would come back in near future and seek additional funding to replace that.

Deputy Chief Carignan

So that has yet to be replaced and as a result of that, that room is still operating, however we had one piece of equipment out on the roof that had failed at that time and that was also part of the system that was not to be replaced; that has never been replaced. Without that system, it is forcing the heat water source pumps which are operating throughout the system to do all of the work that is designed to do only half of the work. It is putting a lot of stress on them and those are starting to break now.

Also, it should be noted that every piece of HVAC equipment, with the exception of the two heat water source pumps we’ve replaced are operating off our 22 Refrigerant which in the year 2020 will no longer be available to purchase and that is going to be an issue throughout the City that is going to have to be addressed. So different portions of this mechanical room are breaking down. The mechanical room operates the air flow in our gun ranges, I was talking about earlier. What we started to find, one of the driving forces to fix this problem is that
several of our range officers had elevated lead levels. So we have had different companies come in and test the
lead throughout the range, we’ve had to go through an extensive cleaning and part of the problem was identified.
There are a couple of reports which you should all have. The air flow in that gun range is not properly designed
for what the officer’s environment is now as they train. It is a single system that pushes the air across and down
the range back into the officer’s faces as they are going through their training. We do use lead free ammunition,
however, there is still lead fragments in the primers and in the bullets as they are hitting into the back wall.

So we had that evaluated and we had a mechanical report completed by a company called SMRT and they
identified each of the parts that were failing and which needed to be replaced and some of these parts were 20
years past life. Just a couple of pictures to show you the age of the building. Several of these systems are run off
of fan belts and they are constantly breaking; they are constantly falling off. And if you are not doing daily
inspections you are going to miss that they are going off and again they will be running at less efficiency.

The last thing I want to address to you to answer your question Alderman Kelly in 2011 the City of Nashua did an
Energy Use Study relative to efficiency and assessment. You will notice in the green highlighted area that the
Nashua Police Department in 2011 was operating at 15% efficiency. The next highest I believe was 40 to 42% if I
am not mistaken. So back in 2011 we were operating at 15%. We haven’t made any changes so I would imagine
that number has gone significantly down. That is the situation we are at now. We are asking for the entire
system to be replaced based on the reports of the SMRT. Yes sir?

Alderman Lopez

So basically we are wasting tax payer money running a very inefficient system and we are potentially affecting the
health of our officers who are practicing their aim so that’s another good place for them to be and your windows
can be described as being a pain.

Deputy Chief Carignan

Correct.

Alderman Klee

First off, yes I agree with Alderman Lopez that it does need to be replaced. And I am really concerned over the
Officers testing high on lead levels and that being something caused by this building, a very unhealthy building it
sounds like to me. How many officers were there. One is too many so let me start with that.

Deputy Chief Carignan

So we have three range officers, three full-time range officers, one that had cycled out throughout the more recent
process. Each of the four had elevated lead levels. One of the officers was at a point where we almost had to
pull him out of his position and not allow him to be on the range. Now I would also like to say that the issue with
the air flow in there and the lead contamination was not 100% based on the HVAC system, that system was
blowing that air back at them being potentially dangerous for them. But that range is also original to the building,
it had never been deep cleaned. So we had to hire a company which we did within our own budget to come in
and clean all of the, we had to clean all of the filters and we had to repaint, we had to strip down the walls, take
out the floor, re-do the floor, repaint everything pull the ceiling down. So we had to a lot of deep clean in that
range which had never been done. We are hoping that in addition to stripping out a lot of the stuff, we don’t have
room in the building to put a lot of the stuff that we had on the range that we use for training. We’ve had to
basically we’ve had to find other places for them. We can tuck them in the garage, we put them outside in a
different closet, so by taking all the material out there we take out stuff that can contain and hold on to that lead
material.

We have changed to a lot of stainless steel and non pourable surfaces to not hold the lead; put tape strips down
that you can take the lead off the shoes as they are exiting. So we have made several changes that were
recommended by a company that specifically does ranges to help curb those lead levels. But the air flow system in there is not pushing that back in an environment that keep it to them.

Alderman Klee

Yeah that was kind of what my second question was. So when it was pushing the air back into them, was that air cycling into other areas of the station or the house sort to speak?

Deputy Chief Carignan

To answer your question simply is no. There is a pretty heavy secure door that closes that range off and it is sound proof so it is pretty tightly sealed so that airflow is not getting pushed throughout the building. In 1977 we had much different tactics, we would basically stand on a static line, the targets would move forward back and forth and the officers would just shoot at the targets as they were moving. The training nowadays is a lot different, I know the Chief has talked quite extensively on how well we train and how important it is that we train and using Best Practices and Modern Techniques. We now have the targets, we engage the targets are static at the end and we move back and forth to it. And some of our training includes moving forward, moving back, moving sideways, up in front of cover. So it is no longer feasible to stand there and the way that air flow goes there’s only one blower that sucks and pushes the air and it is constantly pushing it into the officers. So now the way we do our training it is inefficient and if we need to change the system, now is the time to do the range portion as well.

Alderman Klee

Thank you very much.

Alderman Tencza

Just a couple questions. First assuming that this bond goes through, are you going to need an extra space or have to lease space other places so that the normal routine operations of the Police Department go on as per usual.

Deputy Chief Carignan

Well I guess the assumption would be that this old system is pretty old and pretty big and cumbersome, I am assuming that any new system would be a little more efficient, a little bit more smaller.

Alderman Tencza

And I’m thinking, excuse me for cutting you off, but I am thinking while the work is going on I can imagine it would be difficult to have them completely overhauling the HVAC System or even windows and still have the normal – I mean you guys are running 24/7 over there at the building so it’s not like there is a lot of down time.

Deputy Chief Carignan

I believe that the timeframe of the window project is around fall of 2019 because we have already had the bid put in. So that’s the optimal time for them to put in windows and we will be prepared to provide officers or for civilian personnel to stand by while they do it. The HVAC System would be much longer down the road, because we would have to get the designs created and studied. So we are looking at about a 25 to 27 week turnaround time for them to get the designs complete and to be able to put the project out to bid. So it would be done in different sections. We would, you know, there would be times where we are going to have to shut down operations in different areas. Our gun range, we will know ahead of time what we will need to shut down and we will just plan accordingly. We had to shut down for almost a month to clean the range and we just did different sets of training qualified before and after and we just worked around our systems that we just have to make do. And it’s important so we will make it work.
Alderman Tencza

Just specifically on the gun range and having it be within the Police Department within that building specifically, I mean has there been thought to either having some place that is off site that is not necessarily as contained as the gun range at the Nashua Police Department. Has that been thought of, because regardless of the HVAC system, right if you are shooting bullets in there, there is going to be a lot of lead floating around in the air. Not just in that room but through the building.

Deputy Chief Carignan

There are a couple different things we can cover to answer your question. We have transitioned in this next round of ammunition that we purchased, given that we’ve transferred guns over to 9 millimeter; we are buying now completely lead-free rounds that even the primers no longer carry that lead product in them. Having the range at the station allows us to bring officers in for what we call Quick Hitter Training, meaning we are not going to spend a full day and tie up overtime on this training. If we have a certain issue we can cover, we will bring them off the street, put them down in the range, engage in an exercise and then they can go right back on the street. So they may be off the street for 20 to 25 minutes as opposed to a full 8 hour shift.

Another option is an outdoor range, like say at the landfill. Nashua is pretty limited to where you want bullets flying outside of a building. We our rifle training, we do our high caliber weapons elsewhere at Hudson ranges. We did look into whether or not it would be economically feasible to outsource our range training and do stuff, but with the amount of officers that we have and the amount of training that we do to get either a private range or an outdoor range, they wouldn’t be able to schedule the amount of times that we would need it. And a lot of those private ranges have rules that don’t conform to our shooting, the tactics that we are using and we are trying. Like I say, we do a lot of moving, we do a lot of engaging targets before we have to engage in shooting, a lot of physical activity to get the heart rate up. So there’s a lot more to it that a lot of those ranges for insurance purposes would not allow us to do.

Alderman Dowd

Any other questions? You might want to stay there in case a question comes up, also if we have any questions relative to the bonding itself, Treasurer Fredette is here. I am going to start the Public Testimony.

Testimony in Favor - None
Testimony in Opposition - None
Testimony in Favor - None
Testimony in Opposition - None

ADJOURNMENT

MOTION BY ALDERMAN O’BRIEN TO ADJOURN
MOTION CARRIED

The meeting was declared adjourned at p.m.

Attest: Patricia Piecuch, City Clerk
Nashua Police

Window Replacement Project

HVAC Replacement Project
Window Replacement Project

• Original portion of building built in 1979
• There are 47 original windows in building
• Many are failing causing ingress of weather and energy losses
• A bid (IFB1075-010319) was obtained from D.L. King in the amount of $134,500 to replace the 47 failing windows
• These windows will be the same as the windows installed in 1999
Men’s Locker Room

Several windows leak water and snow causing damage to sheetrock walls
Men’s Locker Room

Another example of gasket failure causing water damage to sheetrock wall
Detective Bureau

Several windows no longer have a rubber gasket surrounding the window allowing cold air, bugs, and moisture to enter the building. This is also a large source of heat/energy loss throughout the building.
Professional Standards
New vs Old Window Comparison

Bright orange/yellow thermal image shows significant heat loss in original window

Pink/blue thermal image shows very little heat loss in newer window in new portion of building
HVAC Replacement Project

- In February of 2019, the Engineering Firm SMRT was hired to perform a complete assessment of the Nashua Police Department’s HVAC System. Some of the highlights of their assessment follow.

- The HVAC systems for the Police Station were designed in two stages with the original part of the building designed in 1977 and a subsequent Addition Project in 1999.

- The 1977 design is based on water source heat pumps and the 1999 design is based on Variable Air Volume System.

- The 1977 design incorporates a Pistol Range and a Fleet Maintenance Garage.

- 47 of the 49 existing heat pumps are charged with R22 refrigerant. This material will be unavailable in the year 2020.

- The Air-cooled Condensing Unit that cools the air prior to it being introduced to the heat pumps has failed and has been removed causing the heat pumps to be overworked.
HVAC Replacement Project

• All equipment controlling the Pistol Range is original to the 1977 building, in poor condition and beyond it’s useful life.
• Range officers have recently been blood tested and showed high lead levels due to the systems inefficiencies.
• The Fleet Maintenance Garage System is also all original to the 1977 building. It is in poor condition and beyond it’s useful life.
• The Variable Air Volume System is original to the 1999 addition.
• There are two main hot water pumps supplying hot water to the addition and operate on a lead/standby fashion. One of those pumps is not operating due to a faulty isolation valve leaving the building with no backup system.
• Many of the components of this system are currently working but are charged with R22 and will not be able to be repaired if they fail.
HVAC Mechanical Room
HVAC Mechanical Room
HVAC Mechanical Room
The Nashua Police Department scored a **15% efficiency rating**

### BA Table 2-A: MUNICIPAL BUILDINGS - Energy Use and Relative Efficiency

<table>
<thead>
<tr>
<th>Nashua Municipal Buildings</th>
<th>Source EUI (kBtu/SF)</th>
<th>CUI ($/SF)</th>
<th>CBEC's Energy Performance Percentage (%)</th>
<th>TOTAL Energy Use (kBtu)</th>
<th>TOTAL Energy Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>City Hall</td>
<td>186</td>
<td>$2.24</td>
<td>45%</td>
<td>4,295,708</td>
<td>$130,097</td>
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<tr>
<td>Court Street Building</td>
<td>152.4</td>
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<td>2,093,958</td>
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<tr>
<td>Department of Public Works</td>
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<td>45%</td>
<td>2,145,065</td>
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<tr>
<td>Fire Dept - Amherst Street</td>
<td>113.9</td>
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<td>1,104,370</td>
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</tr>
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<td>Fire Dept - Lake Street</td>
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<td>Fire Dept - Sipp Brook Road</td>
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<td>Fire Dept - East Hollis Street (Administration)</td>
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<td>Fire Dept - Concord Road</td>
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<td>28%</td>
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<td>$25,238</td>
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<td>Fire Rescue Communications Center</td>
<td>142.1</td>
<td>$1.88</td>
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<td>Hunt Memorial Building</td>
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<td>$1.29</td>
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<td>N/A</td>
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<tr>
<td>Nashua Library</td>
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<td>$1.65</td>
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<td>3,301,274</td>
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<tr>
<td>Nashua Transit Station (under renovation)</td>
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<td>Parking Garage - Elm Street</td>
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<td>Parking Garage - High Street</td>
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<td>Parks &amp; Recreation Administration</td>
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<td>Public Health/Community Services Division</td>
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<td>Solid Waste Office (Lancifill)</td>
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<td>Stadium - Holman</td>
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<td>Stadium - Stellos</td>
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<td>Traffic and Parking Dept</td>
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### BA Table 2-B: INFRASTRUCTURE - Energy Use and Relative Efficiency

<table>
<thead>
<tr>
<th>Nashua Municipal Buildings</th>
<th>Source EUI (kBtu/SF)</th>
<th>CUI ($/SF)</th>
<th>CBEC's Energy Performance Percentage (%)</th>
<th>TOTAL Energy Use (kBtu)</th>
<th>TOTAL Energy Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Lights</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>7,173,587</td>
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<td>Wastewater Treatment Facility</td>
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* CBEC’s (Commercial Building Energy Consumption Survey) Energy Performance Percentage refers to the specific building’s energy performance relative to that of similar building types evaluated by the survey. Not all building types are evaluated; therefore, not all have percentages listed.

Yellow Percentile - 50% (CBEC’s)

Blue: Percentile - 10% (CBEC’s)

Gray: No matching CBEC category for comparison

Report prepared by The Jordan Institute

April 8, 2011

2011 City of Nashua Municipal Buildings Energy Use and Relative Efficiency Assessment

The Nashua Police Department scored a **15% efficiency rating**